

Appendix 4-4: Water Year 2011 Supplemental Evaluations for Source Control Programs in the Caloosahatchee and St. Lucie River Watersheds

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INTRODUCTION

The South Florida Water Management District (District or SFWMD) is required under the Northern Everglades and Estuaries Protection Program [Subsection 373.4595(6), Florida Statutes] to provide an annual progress report on water quality and other conditions. Annual reporting on the progress and effectiveness of the source control programs for the Northern Everglades watersheds is a component of the overall strategy for meeting water quality requirements. Other source control reporting requirements are presented in Chapter 4 of this volume, including the three-year River Watershed Pollutant Control Program update. The three-year update to the Caloosahatchee and St. Lucie River Watershed Protection Plans, Construction Projects, and Research and Water Quality Monitoring Program is provided in Appendices 10-1 and 10-2 of this volume, respectively.

The River Watershed Phosphorus Source Control Program consists of a combination of distinct and coordinated efforts, including the SFWMD Works of the District Phosphorus Control Program, the SFWMD Environmental Resource Permitting (ERP)/Surface Water Management Permitting (SW) and the Florida Department of Agriculture and Consumer Services Notice of Intent Best Management Practices Program. The Works of the District Program is the mandated non-point source control program, which focuses on nutrient discharges from new and existing rule-specified agricultural and non-agricultural land uses. The ERP/SW permits apply to agricultural and non-agricultural projects (new or modifications to existing) that alter surface water flows and have the potential to affect water management and resource protection. The Florida Department of Agriculture and Consumer Services Program is an incentive-based best management practices program targeting pollutants from agricultural land uses.

As source control programs are not yet fully developed and implemented in the Northern Everglades watersheds, it is essential to accurately track their implementation rates. These implementation rates are key to evaluating the effectiveness of the collective source control

¹ Contributed as SFWMD staff during the draft SFER production cycle.

programs with regard to improving downstream water quality. Once performance measure methodologies are developed and adopted, they will be used in conjunction with implementation rates to evaluate progress toward achieving water quality goals. The implementation of source control programs in the Lake Okeechobee Watershed is provided in Appendix 4-1, while this appendix is specific to the St. Lucie and Caloosahatchee River watersheds for Water Year 2011 (WY2011) (May 1, 2010–April 30, 2011). The following pages provide geospatial coverage of these source control programs in the river watersheds, including lands that have SFWMD Works of the District and ERP/SW permits, and agricultural lands that are enrolled in an Florida Department of Agriculture and Consumer Services best management practice program based on an Notice of Intent to Implement documentation as of March 2011.

CALOOSAHATCHEE RIVER WATERSHED: BEST MANAGEMENT PRACTICES IMPLEMENTATION

Performance measures are currently being developed at the sub-watershed level for evaluating source control effectiveness and nutrient loadings within the Caloosahatchee River watershed. The existing flow and monitoring networks will be used and, where necessary modified, to allow nutrient load calculations at the sub-watershed level. **Figure 1** provides a flow schematic of the Caloosahatchee River Watershed depicting the sub-watershed divisions, flow transfers between sub-watersheds, and the existing structures associated with the water quality and flow data used for load calculations.

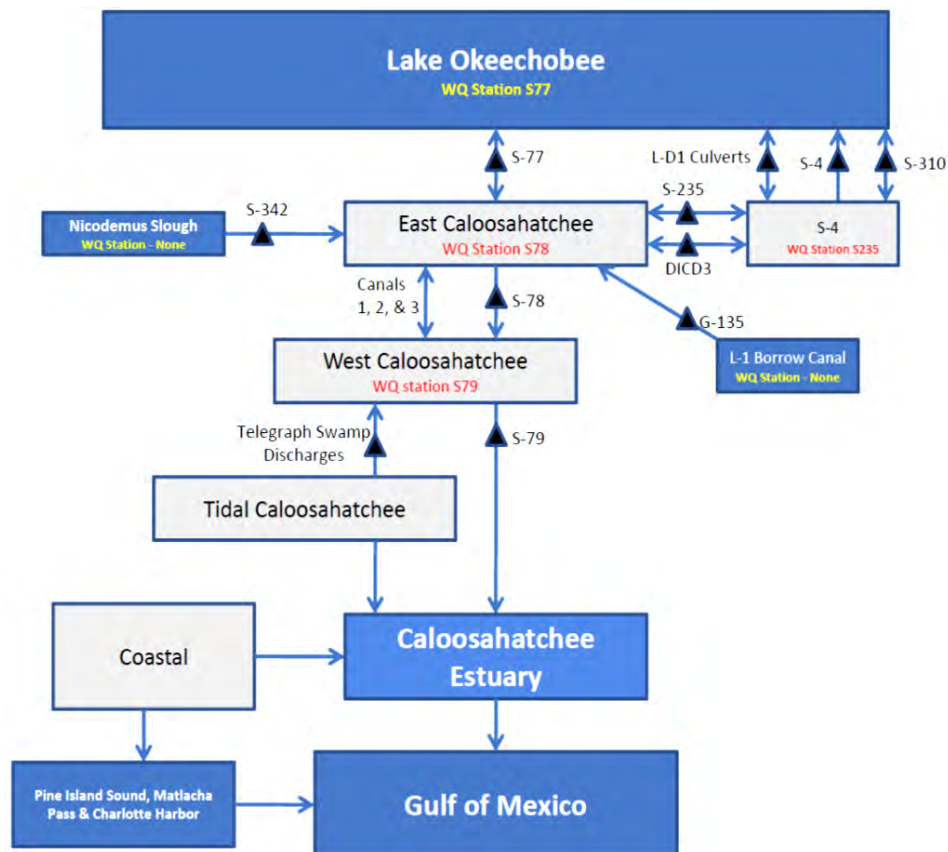


Figure 1. Caloosahatchee River Watershed flow schematic (HDR, 2011a).

**Caloosahatchee River Watershed
S4 Sub-watershed**

FDACS Notice of Intent (NOI)
 ✦✦ Enrollment as March 31, 2011

District Permits
 ▨ Rule 40E-61, Works of the District Permits (WOD)
 ▨ Environmental Resource Permits (ERP)
 ▨ Surface Water Permits (SW)

Land Use 2008
 ■ Agricultural
 ■ Non Agricultural
 ■ Natural Areas

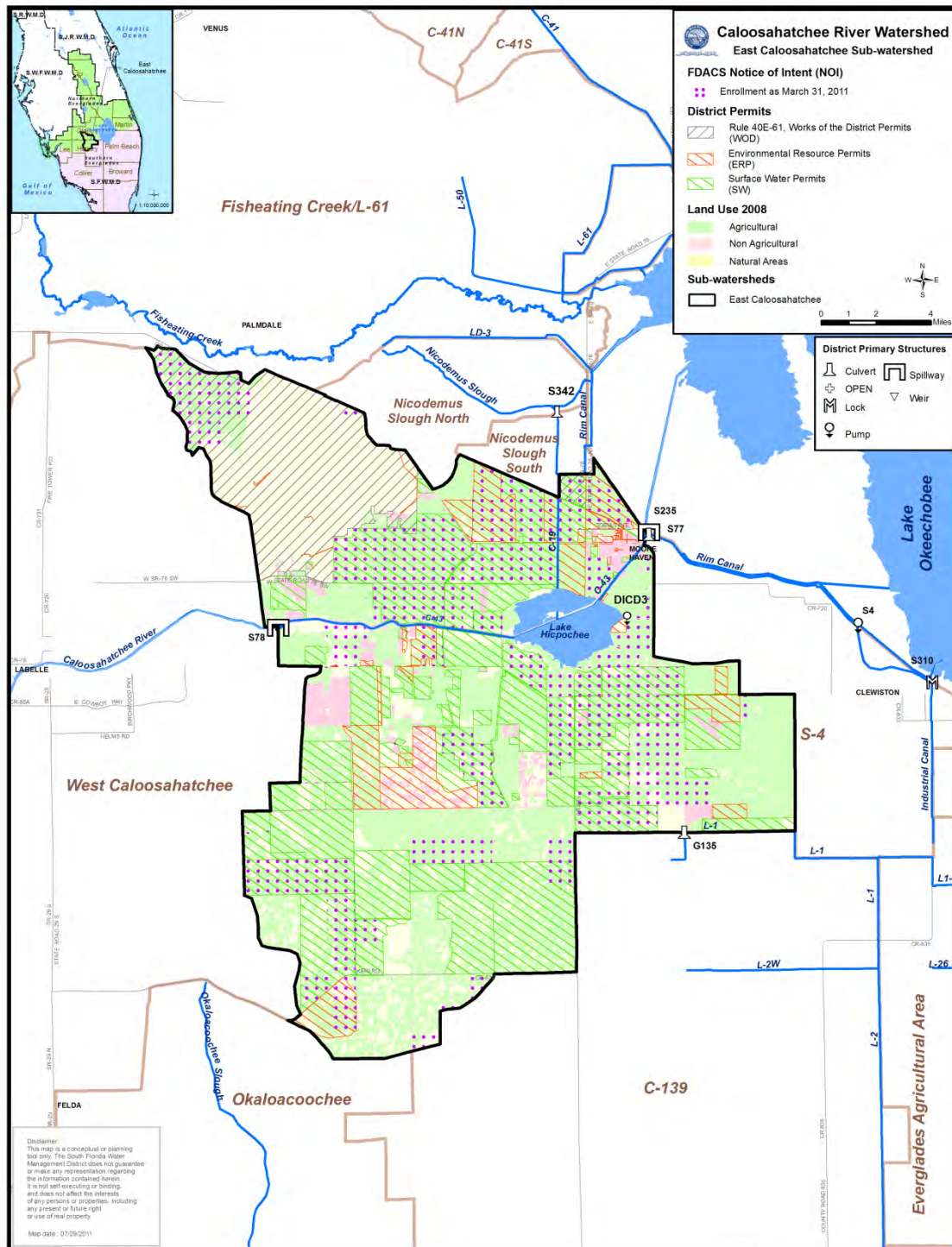
Sub-watersheds
 □ S4

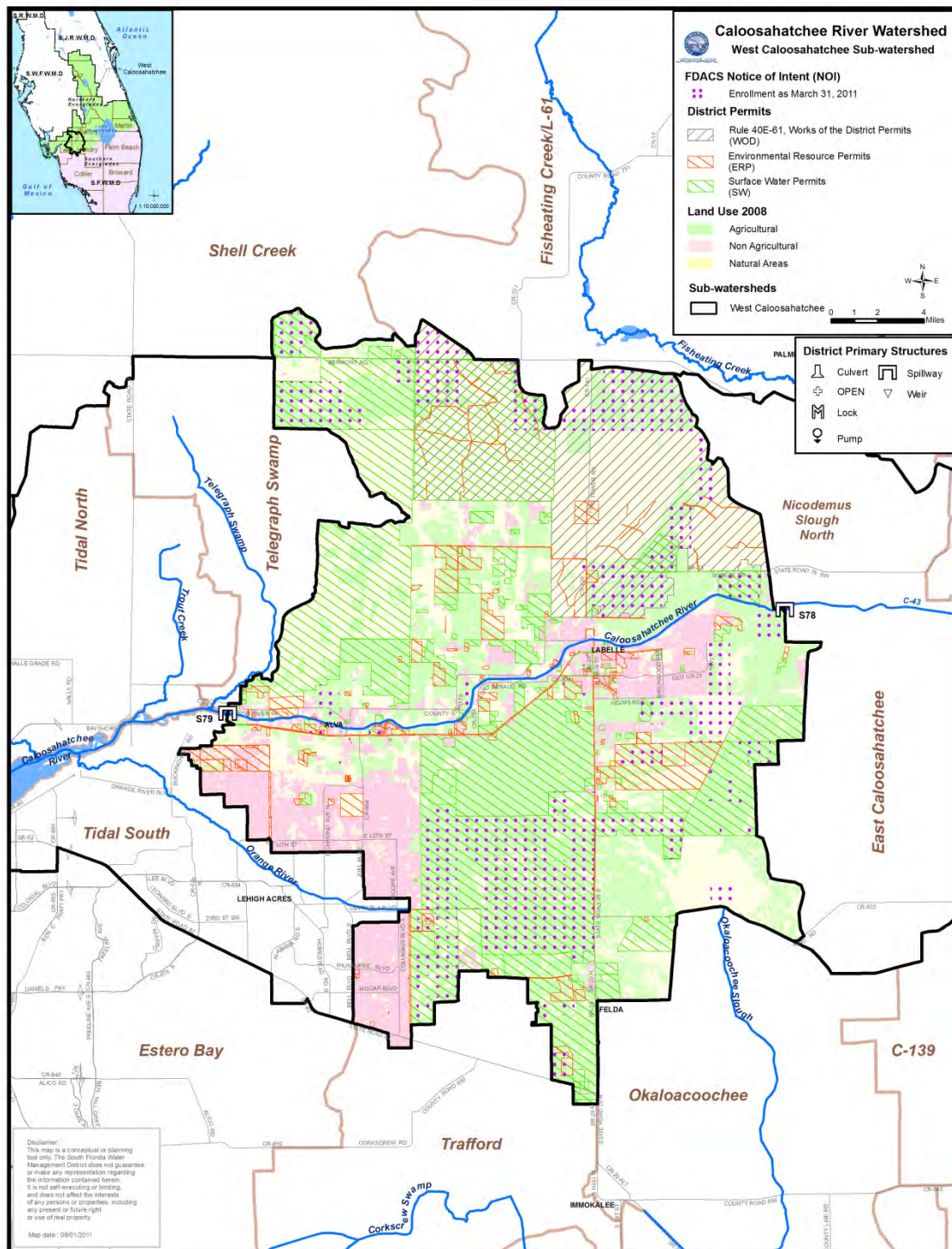
District Primary Structures
 ▤ Culvert ▤ Spillway
 ⊕ OPEN ▽ Weir
 M Lock
 ♀ Pump

Disclaimer:
 This map is a map of the planning area only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not responsible for the accuracy, completeness, or timeliness of the information contained herein, and does not warrant the accuracy, completeness, or timeliness of the information contained herein, and does not warrant the accuracy, completeness, or timeliness of the information contained herein.

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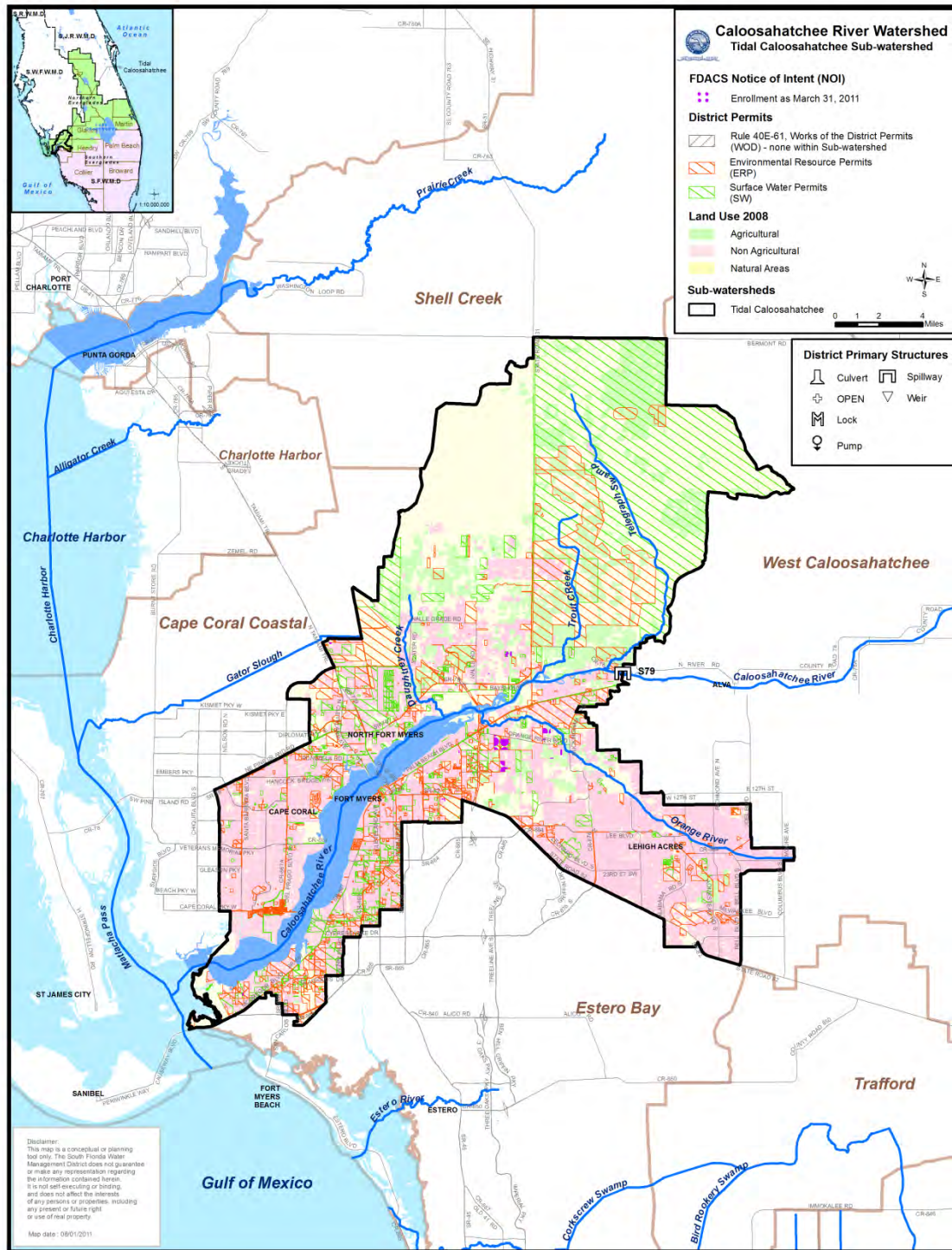
Figure 2. S-4 Sub-watershed in the Caloosahatchee River Watershed.





Note: Silviculture is not included on map

Figure 4. West Caloosahatchee Sub-watershed within the Caloosahatchee River Watershed.



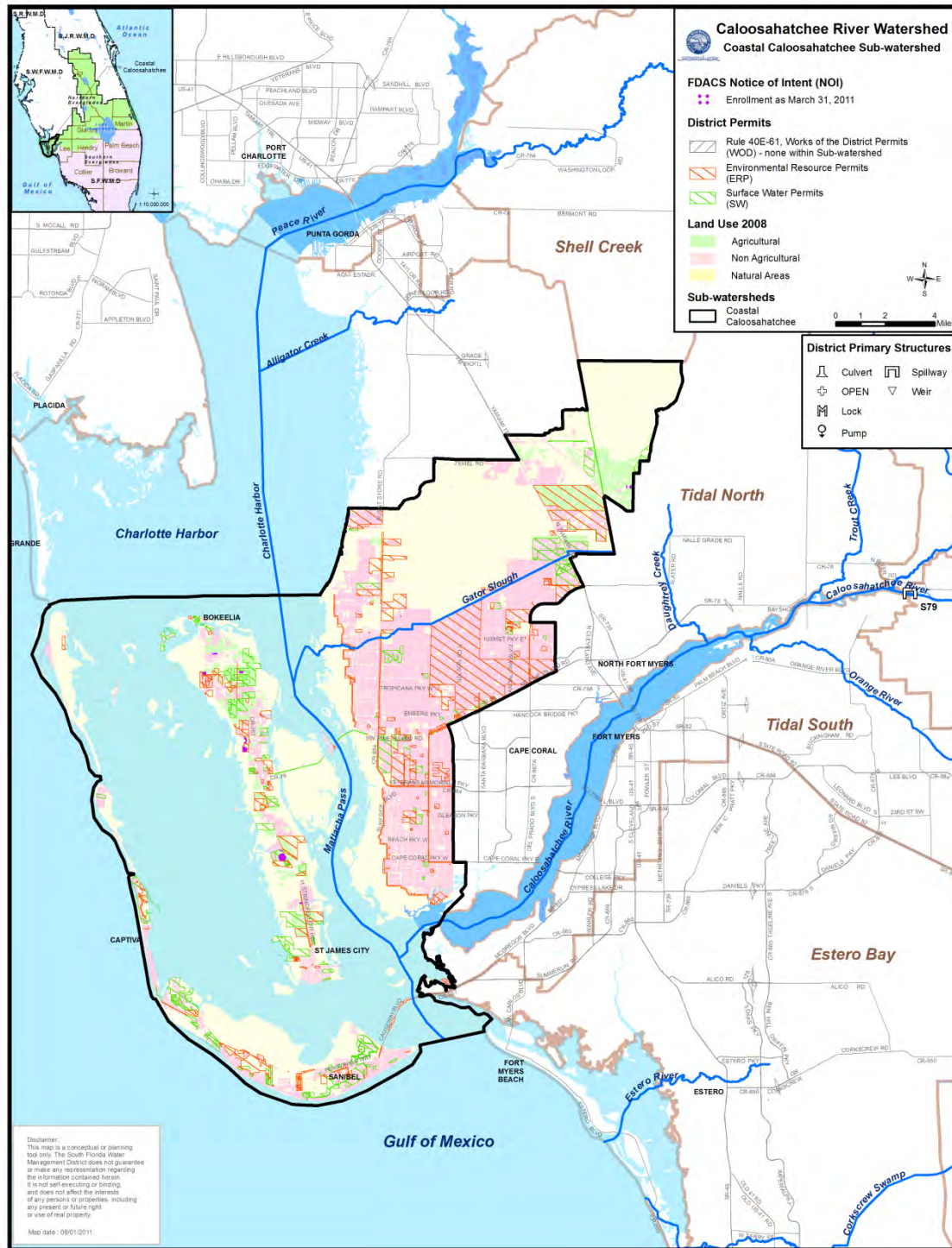


Figure 6. Coastal Caloosahatchee Sub-watershed within the Caloosahatchee River Watershed.

ST. LUCIE RIVER WATERSHED: BEST MANAGEMENT PRACTICES IMPLEMENTATION

Performance measures are currently being developed at the sub-watershed level for evaluating source control effectiveness and nutrient loadings within the St. Lucie River Watershed. The existing flow and monitoring networks will be used and, where necessary modified, to allow nutrient load calculations at the sub-watershed level. **Figure 7** provides a flow schematic of the St. Lucie River Watershed depicting the sub-watershed divisions, flow transfers between sub-watersheds, and the existing structures associated with the water quality and flow data used for load calculations.

As of March 2011, approximately 415,000 acres of the agricultural and non-agricultural acreage within the St Lucie River Watershed are covered by ERP/SW permits (68 percent), and 194,420 acres of the agricultural lands (48 percent) are covered by Notice of Intents. The specific coverage for each of the sub-watersheds is presented in **Figures 8** through **17**.

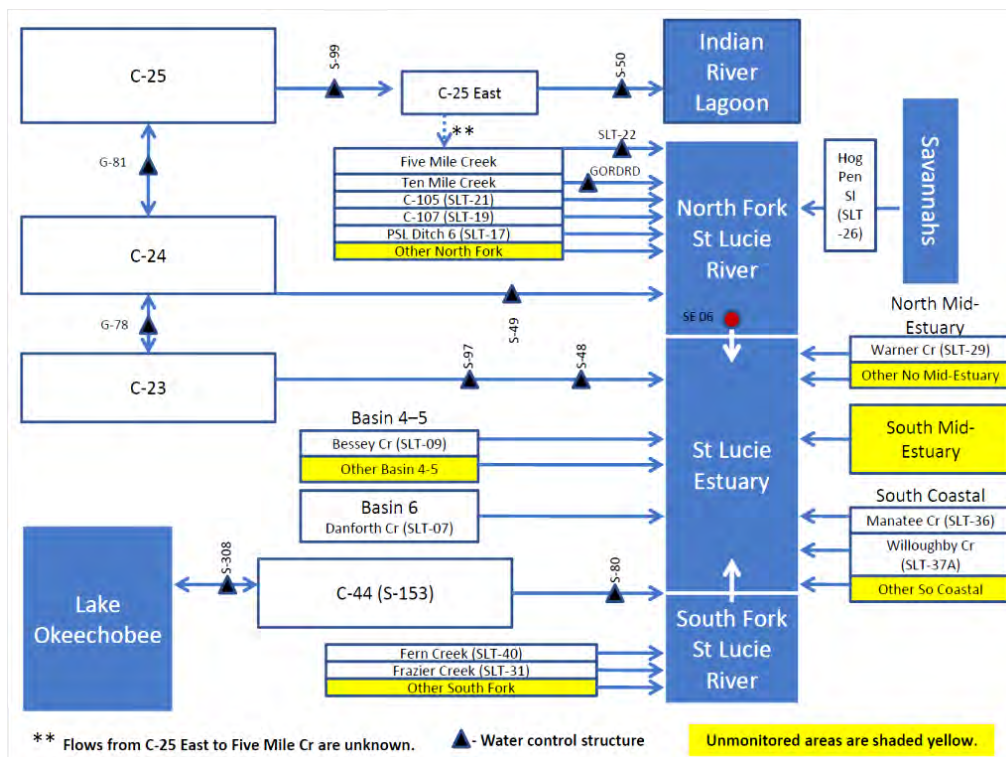


Figure 7. St. Lucie River Watershed flow schematic (HDR, 2011b).

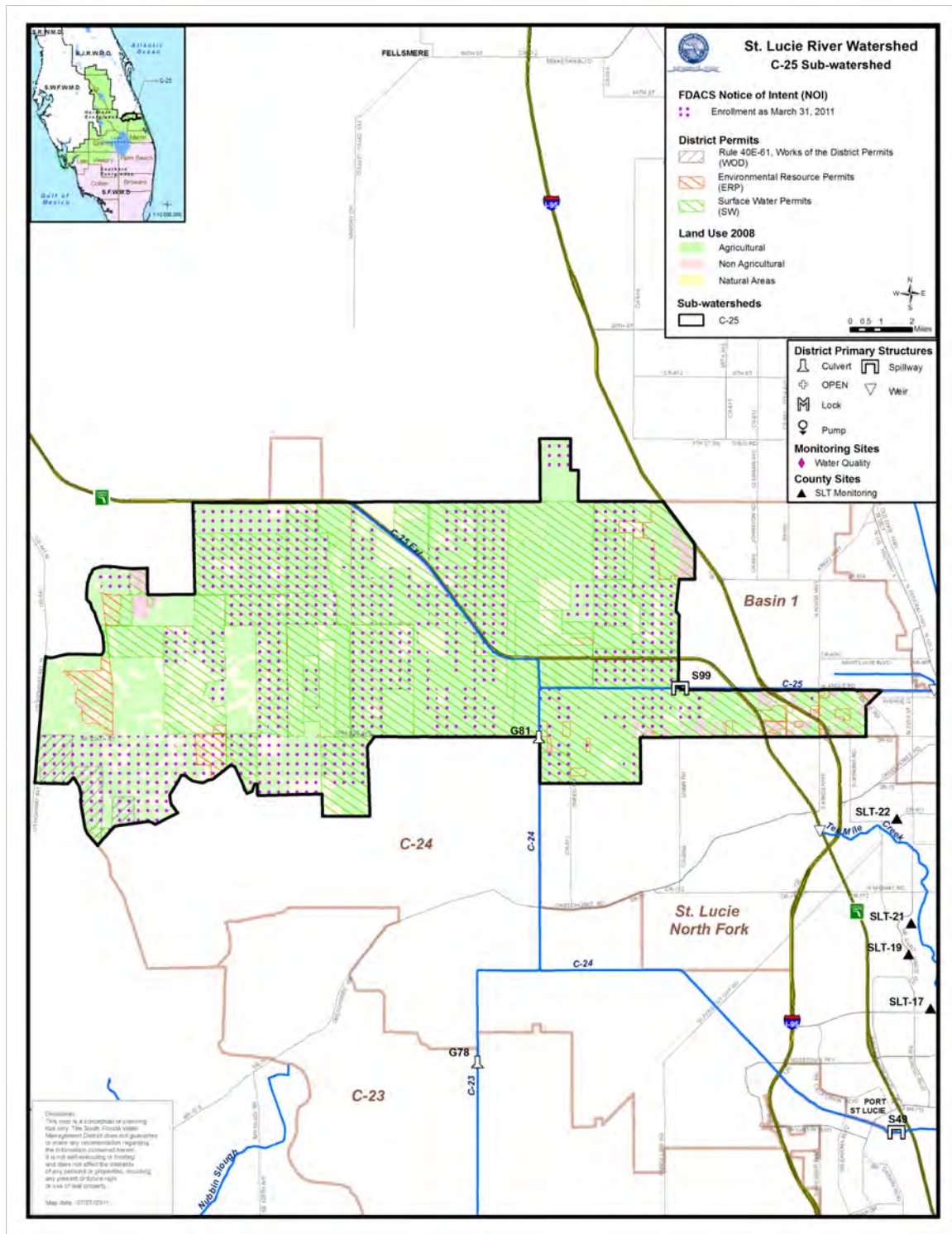


Figure 8. C-25 (including C-25 East) Sub-watershed within the St. Lucie River Watershed.

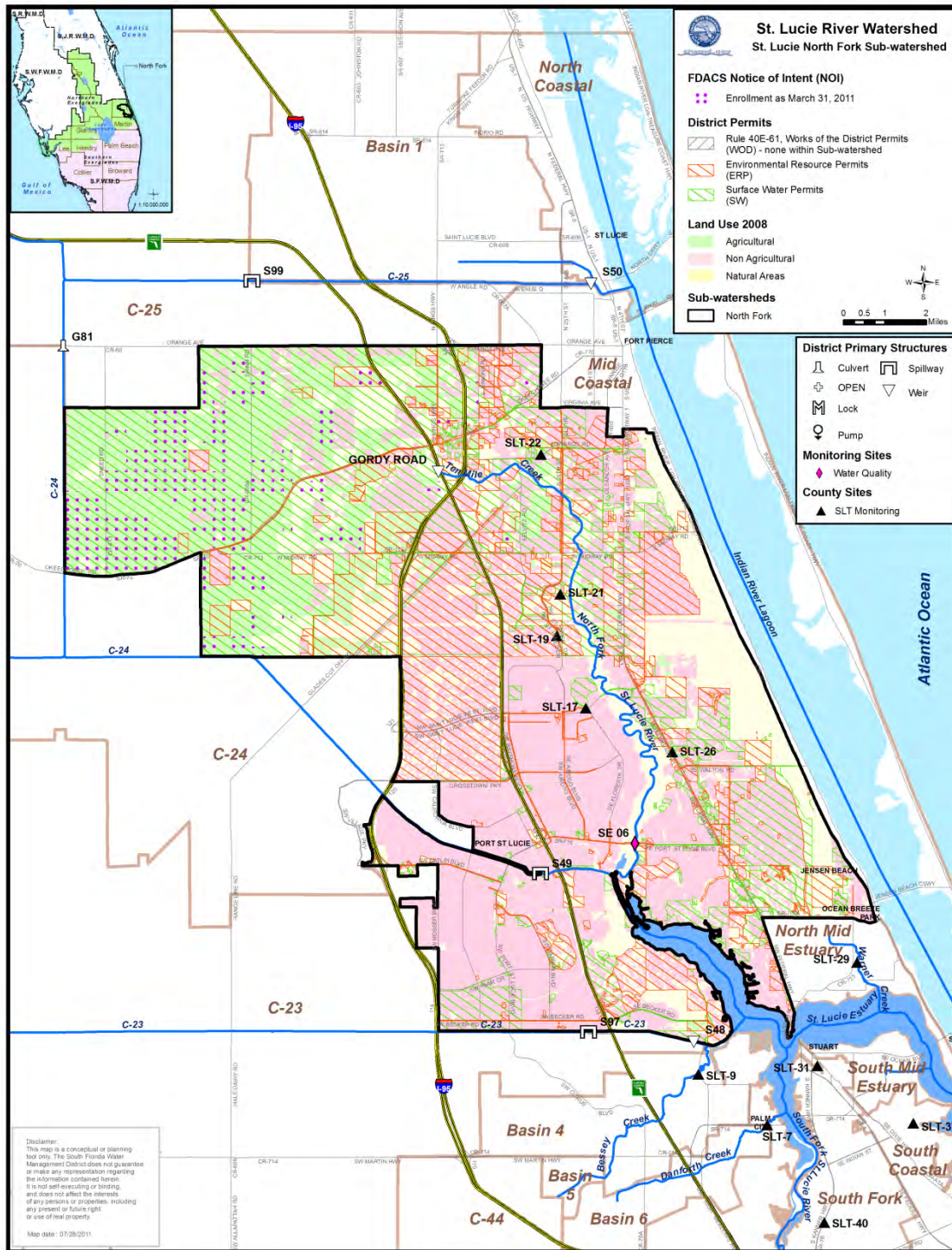


Figure 9. North Fork Sub-watershed within the St. Lucie River Watershed.

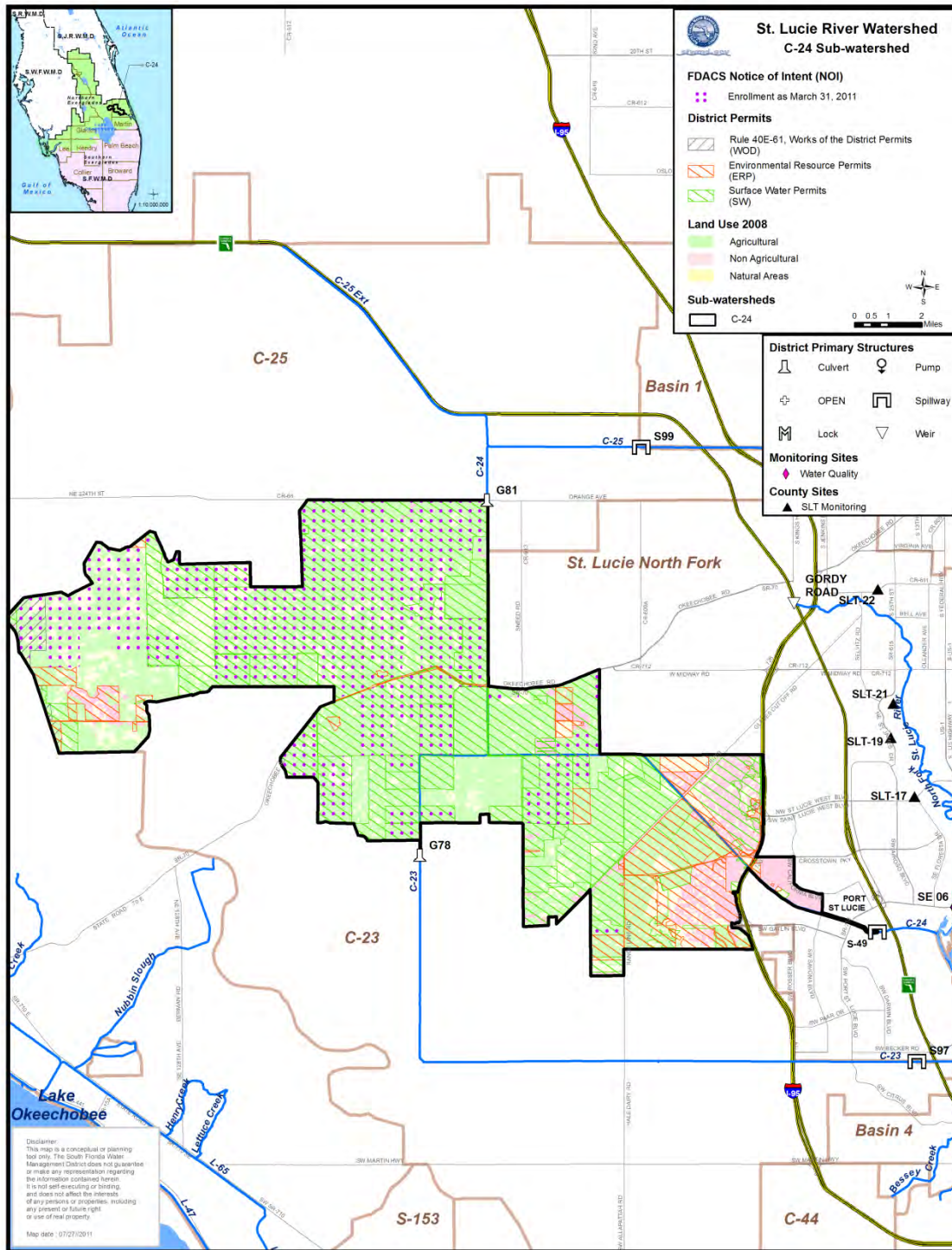


Figure 10. C-24 Sub-watershed within the St. Lucie River Watershed.

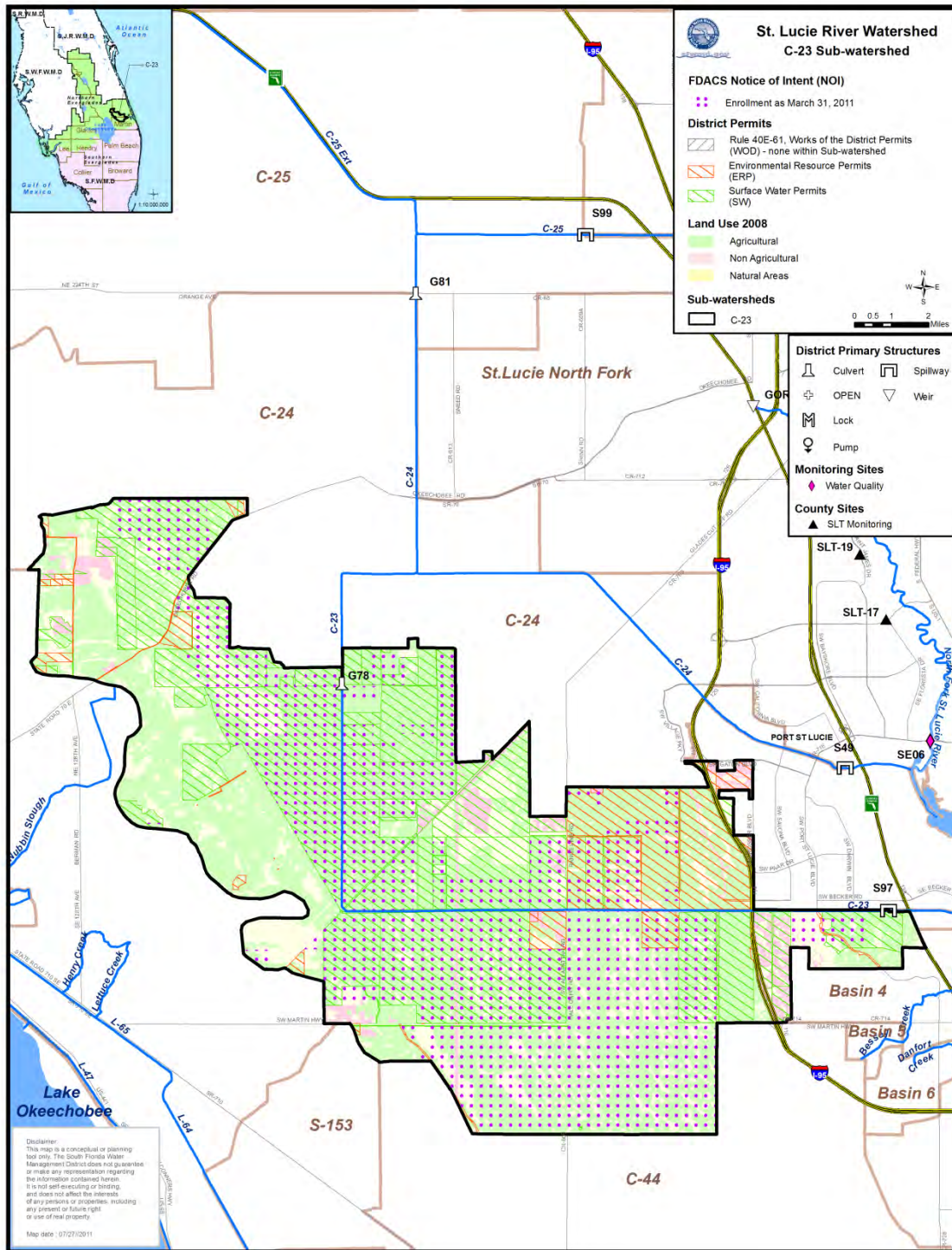


Figure 11. C-23 Sub-watershed within the St. Lucie River Watershed.

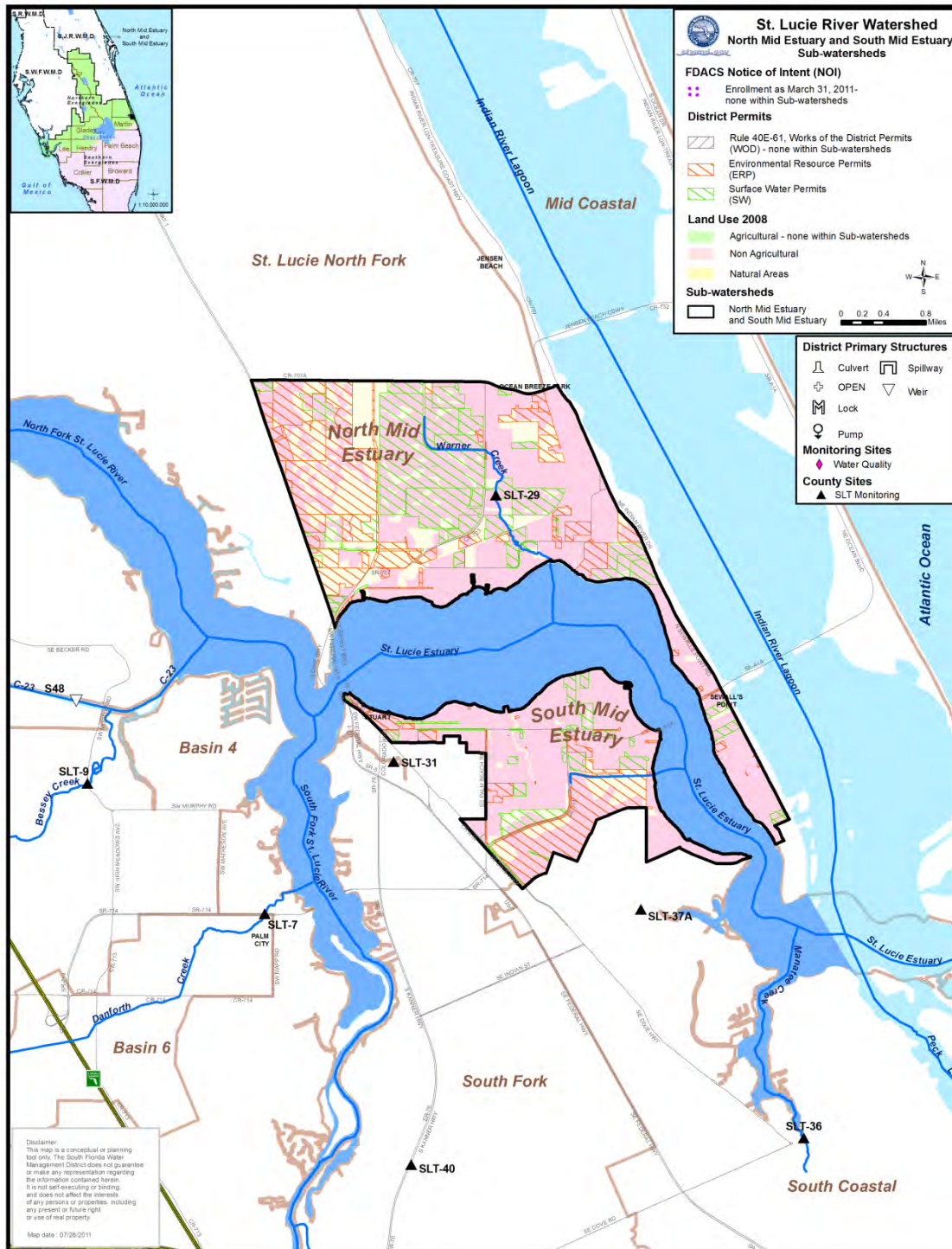


Figure 12. North and South Mid Estuary Sub-watershed within the St. Lucie River Watershed.

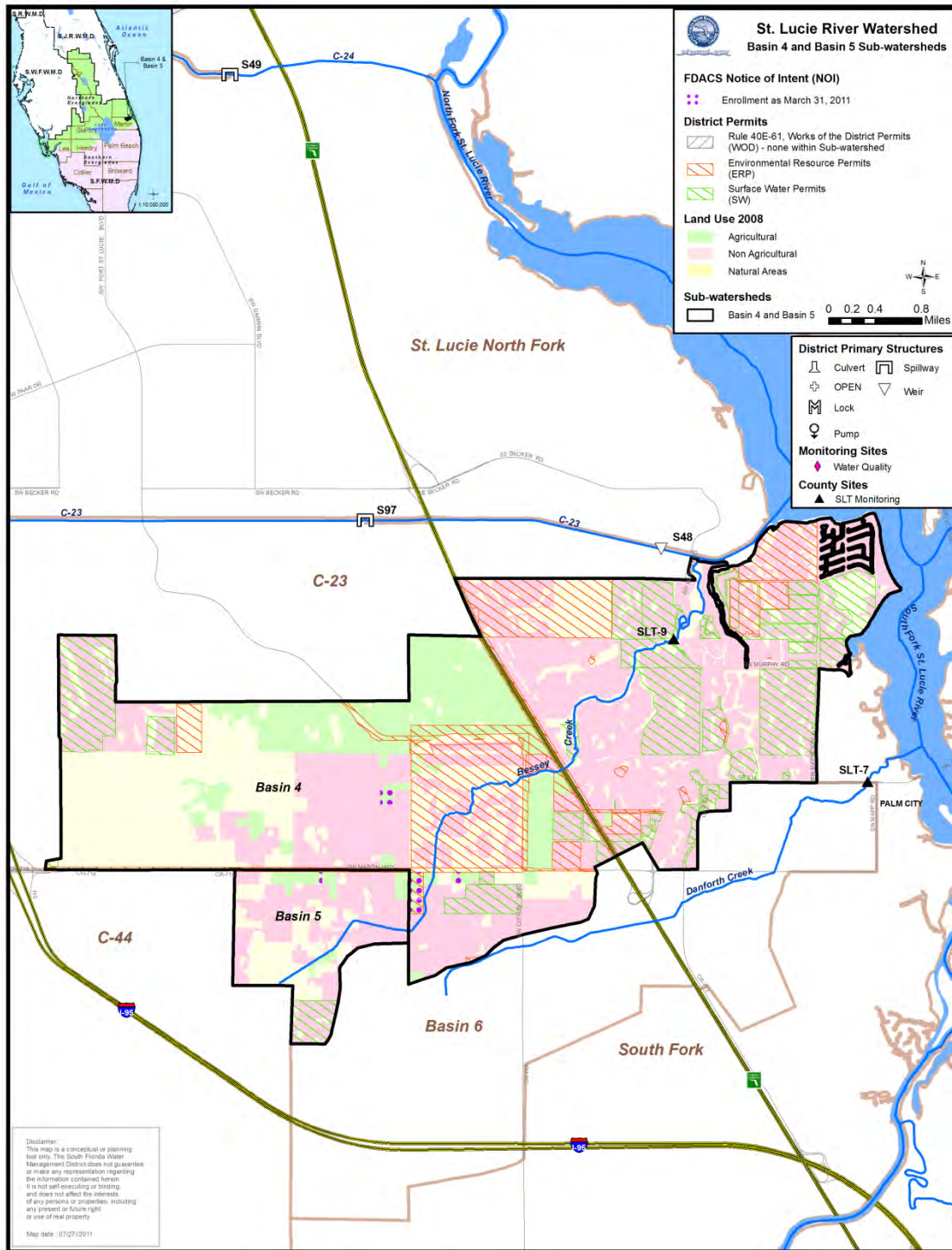


Figure 13. Basins 4 and 5 Sub-watershed within the St. Lucie River Watershed.

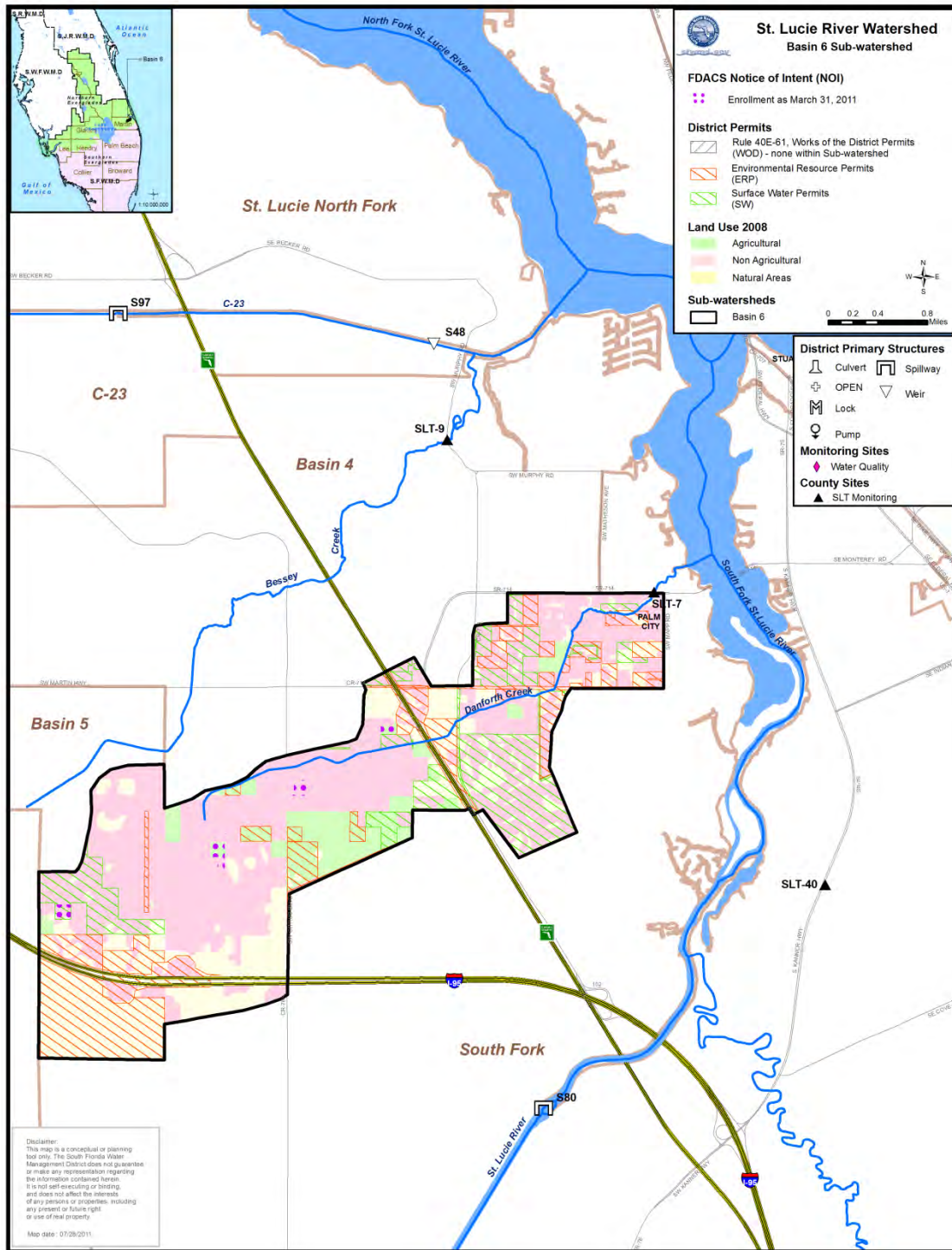


Figure 14. Basin 6 Sub-watershed within the St. Lucie River Watershed.

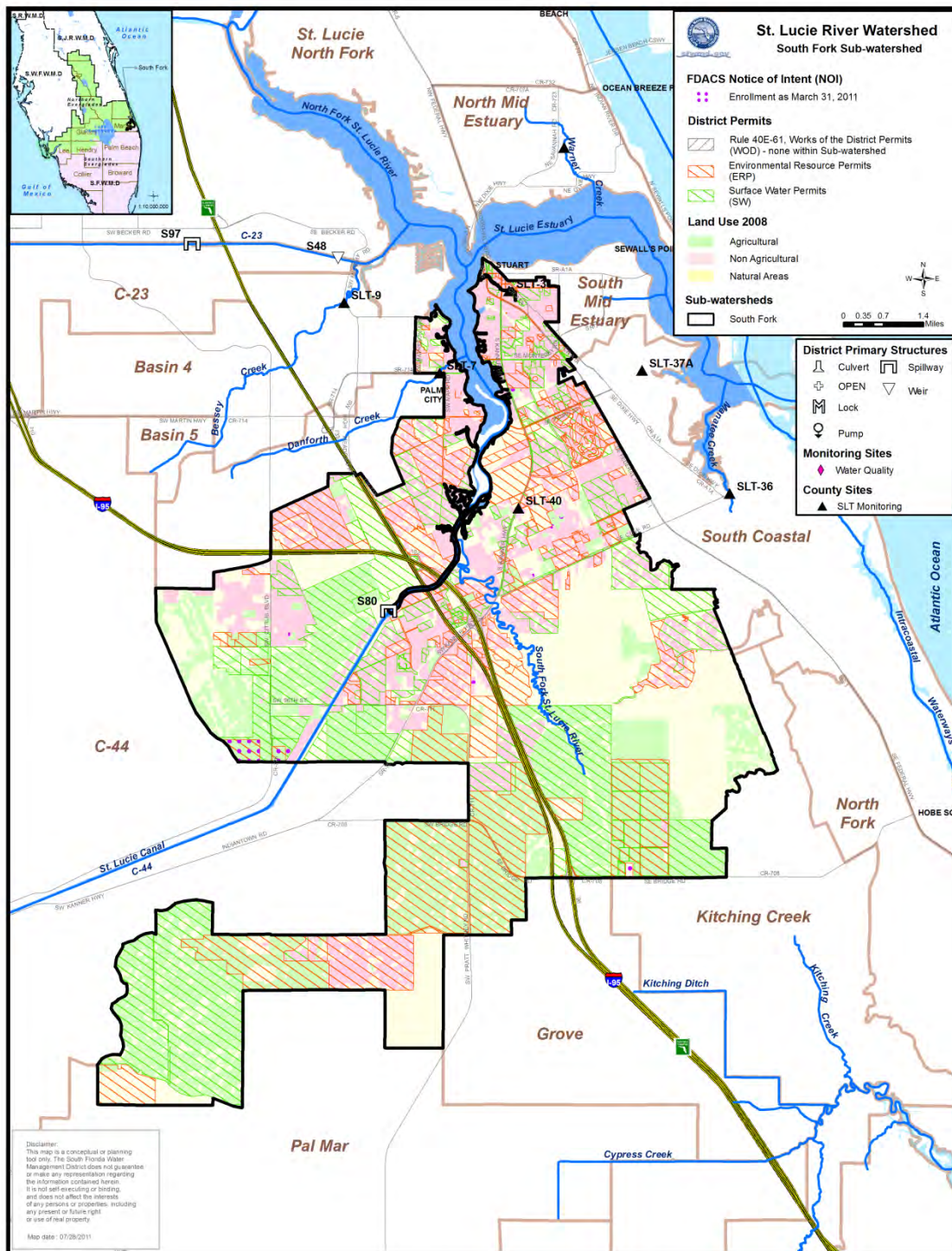


Figure 15. South Fork Sub-watershed within the St. Lucie River Watershed.

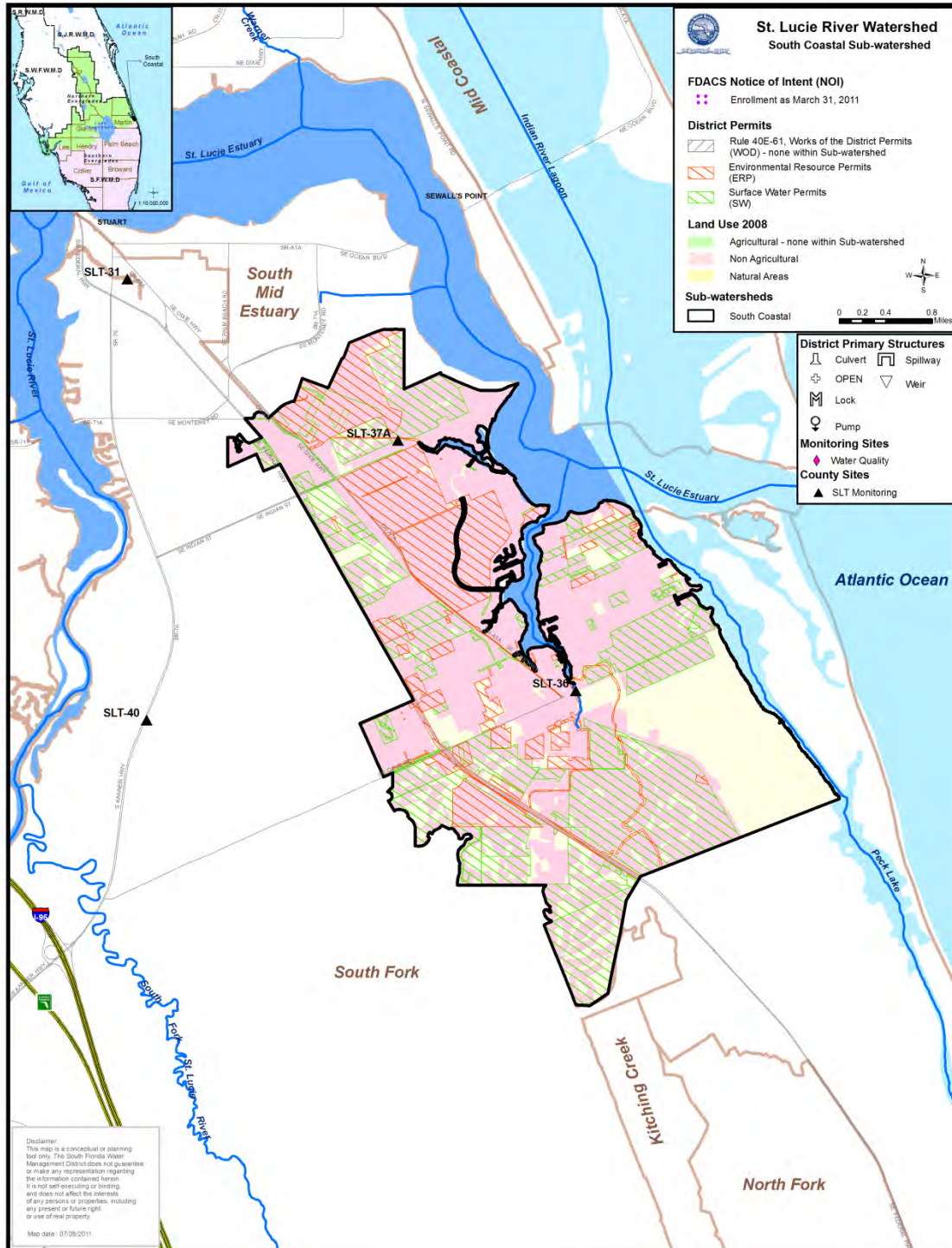


Figure 16. South Coastal Sub-watershed within the St. Lucie River Watershed.

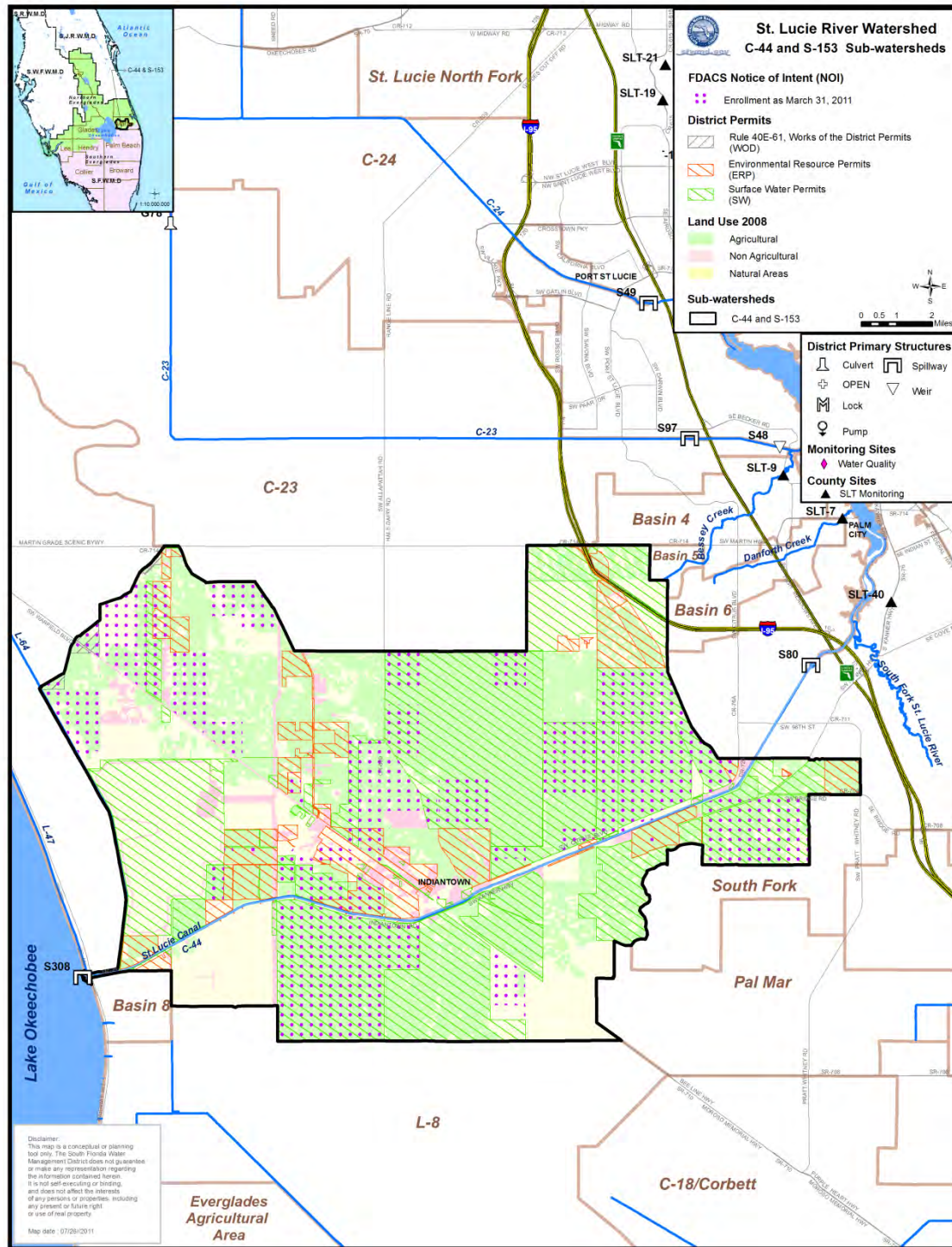


Figure 17. C-44 Sub-watershed within the St. Lucie River Watershed.

LITERATURE CITED

HDR Engineering, Inc. 2011a. Data Analysis and Performance Measure Development for the Caloosahatchee River Watershed Source Control Programs, Deliverable 5.6, Final Analysis of Historical Data Report. Submitted to South Florida Water Management District, West Palm Beach, FL.

HDR Engineering, Inc. 2011b. Data Analysis and Performance Measure Development for the St. Lucie River Watershed Source Control Programs, Deliverable 5.5, Final Analysis of Historical Data Report. Submitted to South Florida Water Management District, West Palm Beach, FL.